

Application Number 09/900,482
Responsive to Office Action mailed January 14, 2005

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application.

Listing of Claims:

Claim 1 (Currently amended): A virtual management system for a data center, comprising:
~~a management topology presenting devices, log servers, facilities, subscribers and services as objects to an administrative interface;~~

a network device having a user interface that presents an administrative management hierarchy of objects that represent components of a network data center that provide applications and services to subscribers; and

a configuration manager implementing changes to the objects in the administrative management hierarchy topology responsive to configuration input from an administrator via the administrative user interface.

Claim 2 (Currently Amended): The virtual management system of claim 1 wherein said user administrative interface comprises a graphical user interface.

Claim 3 (Currently Amended): The virtual management system of claim 1 wherein said user administrative interface comprises a command line interface.

Claim 4 (Currently Amended): The virtual management system of claim 2 wherein said user administrative interface is provided by a host computer coupled to the configuration manager by a network.

Claim 5 (Canceled).

Claim 6 (Original): The virtual management system of claim 4 wherein the network includes a wide area network.

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Claim 7 (Original): The virtual management system of claim 4 wherein the network includes the Internet.

Claim 8 (Original): The virtual management system of claim 1 wherein the management hierarchy includes a topology hierarchy of parent and children objects.

Claim 9 (Currently amended): The virtual management system of claim 1~~[[8]]~~ wherein ~~said hierarchy is organized by facilities parent, and each~~ a facility object serves as a root of the administrative management hierarchy presented by the user interface, and the facility object includes children objects representing of subscribers, log servers that record events within the data center, devices, and services of the data center objects.

Claim 10 (Currently amended): The virtual management system of claim 1~~[[8]]~~ wherein ~~said hierarchy is organized by subscribers parent objects, and each~~ a subscriber object serves as a root of the administrative management hierarchy presented by the user interface, and the subscriber object includes services children objects that represent services provided by the data center.

Claim 11 (Currently amended): The virtual management system of claim 1~~[[8]]~~ wherein the user interface presents the administrative management ~~said hierarchy is organized by at least one~~ services parent object, and each the services object is a parent object having ~~includes children objects of that represent subscribers, facilities and devices of the data center.~~

Claim 12 (Currently amended): The virtual management system of claim 1~~[[8]]~~ wherein the user interface presents the administrative management ~~said hierarchy is organized by at least one~~ devices parent object, and each the devices object is a parent object having ~~includes children objects of representing subscribers, services and facilities of the data center.~~

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Claim 13 (Currently Amended): The virtual management system of claim 1 wherein the ~~administrative~~user interface is accessible from outside of the data center.

Claim 14 (Currently Amended): The virtual management system of claim 1 wherein the ~~administrative~~user interface is accessible by a subscriber.

Claim 15 (Currently Amended): The virtual management system of claim 14 wherein the subscriber can configure services objects.

Claim 16 (Currently Amended): The virtual management system of claim 1514 wherein said services objects include a subscriber virtual private network.

Claim 17 (Currently Amended): The virtual management system of claim 1514 wherein said service objects include a router.

Claim 18 (Currently Amended): The virtual management system of claim 1514 wherein said service objects include a subscriber firewall.

Claim 19 (Currently Amended): The virtual management system of claim 1514 wherein said service objects include a load balancing application that load balances services across the devices of the data center.

Claim 20 (Currently Amended): The virtual management system of claim 1514 wherein said service objects include a web cache.

Claim 21 (Currently Amended): The virtual management system of claim 1514 wherein said service objects include a secure sockets layer accelerator service.

Claim 22 (Original): The virtual management system of claim 1 wherein the configuration manager provides real time network services status to administrative interface.

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Claim 23 (Original): The virtual management system of claim 1 wherein the configuration manager comprises a server and an agent in a service device.

Claim 24 (Original): The virtual management system of claim 23 wherein the server and the agent are coupled via a network.

Claim 25 (Original): The virtual management system of claim 23 wherein the network is a wide area network.

Claim 26 (Currently amended): The virtual management system of claim 24 wherein the server and the agent communicate via HTTP get and post operations.

Claim 27 (Currently Amended): The virtual management system of claim 1 wherein access to each of said objects via said administrative user interface is governed by an the administrative management hierarchy.

Claim 28 (Currently amended): A system for managing a plurality of networking services provided by devices coupled to a network in a data center, comprising:

a configuration controller coupled to the devices in the data center;

a service management interface for the controller enabling device configuration based on a service object representing one or more of the services;

a subscriber management interface for the controller enabling device configuration based on a subscriber object representing a subscriber of the data center; and

a device management interface for the controller enabling device configuration based on a device object representing one or more of the devices; and

a facility management interface allowing the administrator to configure objects in the system based on a facility object representing a geographic site of the data center,

wherein the configuration controller controls access to the service management interface, the subscriber management interface, the device management interface and the facility

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management interface in accordance with a hierarchy that relates the service object, the subscriber object, the facility object and the device object.

Claim 29 (Original): The system of claim 28 wherein the service management interface presents subscriber objects, facility objects or device objects relative to the service object.

Claim 30 (Original): The system of claim 28 wherein the subscriber management interface presents services relative to the subscriber object.

Claim 31 (Original): The system of claim 28 wherein the device management interface presents facilities, services and subscribers relative to the device object.

Claim 32 (Original): The system of claim 28 wherein the facility management interface presents devices, subscribers, and services relative to the facility object.

Claim 33 (Original): The system of claim 28 wherein access to management of objects in each interface is governed by an administrative hierarchy.

Claim 34 (Original): The system of claim 28 wherein the interfaces and the controller are coupled via a wide area network.

Claim 35 (Original): The system of claim 28 wherein the interfaces are provided in a graphical user interface.

Claim 36 (Original): The system of claim 35 wherein each said interface is linked to a content service application and a service module coupled to a device agent to administer changes in the device via the device agent.

Claim 37 (Original): The system of claim 28 wherein each of said interfaces communicates with the configuration controller via the Internet.

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Claim 38 (Currently amended): An interface for management of a network data center, comprising:

a graphical user interface presenting components of the data center ~~a plurality of network items~~ as a hierarchy of objects within the interface, wherein the data center includes devices that provide services to a set of subscribers;

service applications coupled to the graphical user interface objects, the applications controlling configuration of network objects responsive to the user interface; and

a network manager interacting with ⁿthe devices on the network in the data center to implement changes provided by the service applications.

Claim 39 (Currently amended): The interface of claim 38 wherein the objects include a subscriber object representing a subscriber to the data center.

Claim 40 (Currently amended): The interface of claim 38 wherein the objects include a device object representing a device within the data center.

Claim 41 (Currently amended): The interface of claim 38 wherein the objects include a service object representing service provided by the data center.

Claim 42 (Original): The interface of claim 41 wherein the service applications are launched by one or more service objects.

Claim 43 (Original): The interface of claim 41 wherein the service applications are hosted by the network manager.

Claim 44 (Original): The interface of claim 38 wherein the objects include a facility object.

Claim 45 (Original): The interface of claim 38 wherein the network manager comprises a network management server and a device agent.

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Claim 46 (Original): The interface of claim 38 wherein the management server provides said graphical user interface to a user device.

Claim 47 (Currently Amended): The interface of claim 38 further comprising an object management interface and having that includes a plurality of configuration applications and configurations storage for objects coupled to the network.

Claim 48 (Original): The interface of claim 38 wherein the graphical user interface is provided in a Web browser.

Claim 49 (Original): The interface of claim 38 wherein the graphical user interface is coupled to the manager via a Wide area network.

Claim 50 (Currently amended): A graphical network interface for a data center, comprising:
a plurality of object views representing a network data center, including:
a facility object view to view configuration data for geographic sites associated with the data center,
a subscriber object view to view configuration data for subscribers to the data center,
a device object view to view configuration data for devices within the data center, and
a log server object view to view log servers that record events within the data center,
each said view including a set of objects organized by a hierarchy relative to another of said views; and
at least one link to an object in said set of objects, allowing modification of configuration data for the object via the view.

Claim 51 (Original): The graphical network interface of claim 50 wherein said facility view includes at least a subscriber branch or a device branch or a log server branch.

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Claim 52 (Original): The graphical network interface of claim 50 wherein said subscriber view includes at least a device branch, a log server branch or a facilities branch.

Claim 53 (Original): The graphical network interface of claim 50 wherein said device view includes at least a facilities view.

Claim 54 (Original): The graphical network interface of claim 50 wherein said interface is provided in a Web browser.

Claim 55 (Original): The graphical network interface of claim 50 wherein said interface is provided as machine readable code for an administrative device.